



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/749,424	12/31/2003	Wenguang Li	066243-0237 (141211)	9576
33679	7590	11/02/2007		
GE MEDICAL SYSTEM C/O FOLEY & LARDNER LLP 777 EAST WISCONSIN AVENUE MILWAUKEE, WI 53202-5306			EXAMINER KHOLDEBARIN, IMAN K	
			ART UNIT 3737	PAPER NUMBER
			MAIL DATE 11/02/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/749,424

Applicant(s)

LI ET AL.

Examiner

I Kenneth Kholdebarin

Art Unit

3737

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01/10/07.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments filed Jan 10, 2007 have been fully considered but they are not persuasive.

2. After further consideration of the applicant's argument, examiner respectfully disagrees.

In regards to applicant's remarks on page 8, applicant argues that Willis 657, does not anticipate the claimed limitations contained in claim 1 and dependent claims.

More specifically, applicant argues that "Willis 657 reference arguably teaches away from locating a feature of or relating to a heart with a probe which is inside a body, and registering a representation of the probe with an image of the heart baed on a location of the feature".

Examiner would like to further clarify that Willis teaches, in col. 2 line 45-60,

*"The present inventions are directed to methods and systems for imaging internal anatomical structures. The internal anatomical structure can be tissue found inside the body of a patient. For example, the internal anatomical structure can be an internal organ, such as a heart. In the inventive method and system, ultrasound image data of the internal anatomical structure is acquired and arranged in a first coordinate system. The ultrasound image data can either be acquired internally (e.g., by using an internal peripheral device, such an intracardiac imaging probe or a transesophageal imaging probe) or externally (e.g., by using an external peripheral device.) The location of at least one ultrasound transducer is determined within this first coordinate system and a second coordinate system (e.g., using a registration subsystem having one or more processors). Although not necessary, the second coordinate system is preferably fixed relative to the internal anatomical structure (e.g., by establishing the second coordinate system within the internal anatomical structure itself), so that the second coordinate system need not be modified if the internal anatomical structure moves."*

Therefore, the examiner maintain previous rejection dated September 29, 2006 and repeated below, in addition claims 2 -6 are dependent of claim 1.

Re Claim 7: Willis discloses Recent work at Duke University has demonstrated the ability to localize catheters within a 3-D ultrasound image in addition Willis furthermore discloses instead of, or in addition to, graphically reconstructing the body tissue, any one of a number of imaging techniques to generate a 3-D image of the body tissue. For example, a Magnetic Resonance Imaging (MRI) imager, or a Computed Tomography (CT) imager can be used to generate a 3-D image of the internal anatomical structure.

Therefore the examiner maintain previous rejection dated September 29, 2006 and repeated below, in addition claims 8-11 are dependent of claim 7.

In regards to applicant's remarks on page 10, applicant argues after considering the amendment to the claim(s) that Rom does not teach the imaging system of a body coupled to a probe which is inside the body. The examiner after further consideration of the applicant's argument respectfully concludes by replacing the probe (10) of Rom's teaching with the probe of Willis '657 teaching, the combination of the prior art reads on the limitation of claim 12. In addition claims 13-15 are dependent of claim 12.

In regards to applicant's remarks on page 12, applicant argues after considering the amendment to the claim(s) that after amendment to the claims "Chenal does not teach a display of an image of a heart and representation of a probe which is in or adjacent to the heart where the representation of the probe is registered with the image on the display based on a location of at least one feature of the heart". The examiner after further consideration of the applicant's

argument, respectfully concludes in view of Chenal it would have been obvious to combine the system and method thought by Willis '657, in order to display an image of a heart and representations of the probe. In addition claims 18-24 are dependent of claim 17.

Furthermore the examiner suggests the teaching of Willis, where Willis teaches in one navigation system, commercially available as the Realtime Position Management.TM. (RPM) tracking system developed by Boston Scientific Corporation, located in San Jose, Calif. a graphical representation of a catheter is displayed in a 3-D computer-generated representation of a body tissue, e.g., heart chamber.

### **Claim Rejections - 35 USC § 102**

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Re Claim 1: Willis ('657) discloses, a method comprising:

(a) Locating a feature of or relating to a heart with a probe which is inside a body; and (b)

Art Unit: 3737

Registering a representation of the probe with an image of the feature of the heart. (See col.2 line 45-50).

Re Claim 7: Willis ('657) discloses, a method comprising:

Acquiring at least three-dimensional image of an organ or structure inside a body; Registering a representation of a probe, which is inside the body with the image using at least one feature of the organ or structure. (See background of invention and col. 17 line19-35).

Re Claim 17: Willis ('657) discloses:

In one navigation system, commercially available as the Realtime Position Management.TM. (RPM) tracking system developed by Boston Scientific Corporation, located in San Jose, Calif. a graphical representation of a catheter is displayed in a 3-D computer-generated representation of a body tissue, e.g., heart chamber.

### **Claim Rejections - 35 USC § 103**

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 12 and 17 as understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Willis ('657) in view of Rom (6,685,637).

Although Rom does not teach the probe (10) to be inside the body, Willis teaches that In the inventive method and system, ultrasound image data of the internal anatomical structure is acquired and arranged in a first coordinate system. The ultrasound image data can either be acquired internally (e.g., by using an internal peripheral device, such an intracardiac imaging probe or a transesophageal imaging probe.

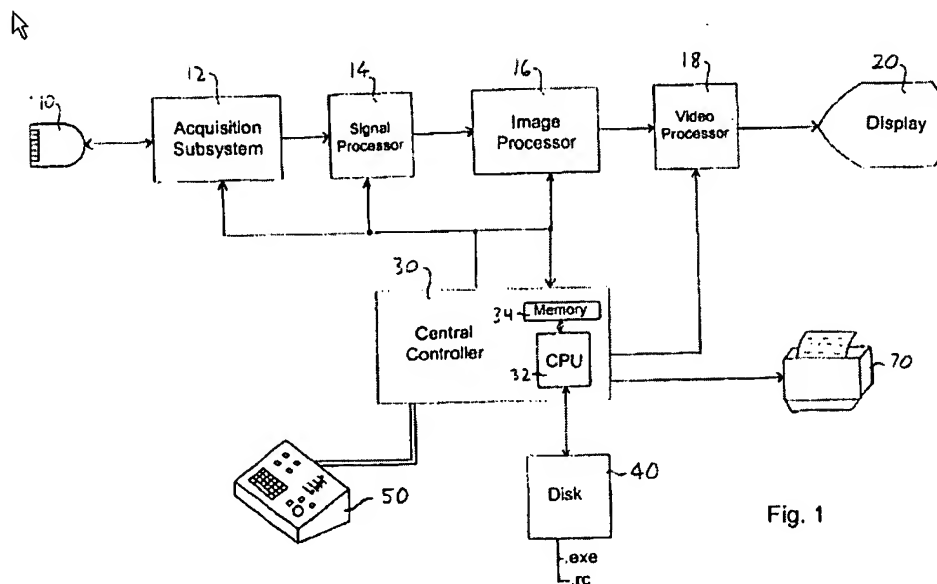


Fig. 1

Therefore it would have been obvious to one ordinary skill in the art at the time of the invention was made to substitute an internal probe with the external probe of Rom's teaching in order to obtain the images of the internal organs such as heart within the body.

***Conclusion***

3. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to I Kenneth Kholdebarin whose telephone number is 571-270-1347. The examiner can normally be reached on M-F 8 AM- 4 PM.

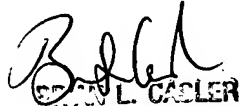
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on 571-272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

IKK

/Iman Kenneth Kholdebarin/

09/28/2007

  
BRIAN L. CASLER  
SUPERVISOR, EXAMINER IN CHARGE  
TECHNICAL CENTER 3737